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## (54) NONWOVEN CLOTH FOR BATTERY SEPARATOR AND BATTERY USING IT

## (57)Abstract:

PROBLEM TO BE SOLVED: To improve a short-circuited resistance and an electrolyte maintaining characteristic by using a nonwoven cloth which is composed of organic fiber having a specified fiber diameter and whose thickness and organic fiber amount are specified.

SOLUTION: This is a nonwoven cloth for a battery separator composed of organic fiber whose fiber diameter is 1-5  $\mu$ m and fiber thickness is 10-35  $\mu$ m, and an amount of fiber per unit area is 1-15 g/m<sup>2</sup>. It is preferable that the organic fiber is made of polypropylene fiber, polyethylene terephthalate, polybutylene terephthalate fiber, polyphenylene sulfite fiber, or polyethylene naphthalate fiber. For example, the separator is obtained by using the nonwoven cloth made of polypropylene whose average fiber diameter is 3  $\mu$ m, fiber amount per unit area is 6 g/m<sup>2</sup>, fiber thickness is 22  $\mu$ m, then impregnating the nonwoven cloth with a solid electrolyte of polyethylene oxide and a propylene carbonate solution made of lithium hexafluorophosphate, and pressing it with a heating press to harden same. In the case of a battery using a solid electrolyte, a high efficiency discharge characteristic is attained by use of the separator.

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